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April 22, 2004

The Honorable Nils J. Diaz
Chairman
Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD, 20852

Dear Chairman Diaz:

I am writing regarding reports that two spent fuel rods are missing from Entergy's Vermont Yankee nuclear power plant.

As you will recall, Daily Event Report #37596, December 15, 2000 indicated that two radioactive spent fuel rods were missing from the Millstone Nuclear Power Station Unit 1. I sent the Commission two letters regarding this subject (see http://www.house.gov/markey/Issues/iss_nuclear_ltr001220.pdf, http://www.house.gov/markey/Issues/iss_terrorism_ltr011204.pdf). After an extensive investigation that costs \$9 million, the licensee concluded that the fuel rods in this matter were "somewhere" – perhaps in South Carolina, perhaps in Washington State, perhaps still in Connecticut. The Commission then concluded that even though it had no idea where the fuel rods were, they did not pose a public health risk to anyone. Despite that fact that the rods were never found, the Commission fined the plant operator only \$288,000 for its lax nuclear materials accounting and oversight.

When asked about this most recent report of missing fuel rods from the Vermont Yankee power plant, your spokesperson stated that "We do not think there is a threat to the public at this point. The great probability is this material is still somewhere in the pool."

The Vermont Yankee fuel rod loss, coming on the heels of the Millstone incident, raises some fundamental concerns about the nature and adequacy of nuclear reactor licensee spent fuel accounting, oversight, and security. If nuclear reactor operators are not maintaining strong controls over nuclear materials, and are unable to account for their location, how can the public be assured that these sensitive and potentially dangerous materials are not falling into the wrong hands? As you know, Al Qaeda is reportedly seeking radioactive materials with which to construct a dirty bomb or homemade nuclear weapon in North America, and the most recent elevation of the terror threat level to "Orange" was in part motivated by fears of a terrorist plot to

detonate a dirty bomb in an American city. Over the past several years, I have written several letters to the Commission, the Department of Energy (DOE), the Department of Homeland Security and U.S. Customs (see <http://www.house.gov/markey/dirtybombs.htm> for such correspondence) regarding lax security associated with these materials.

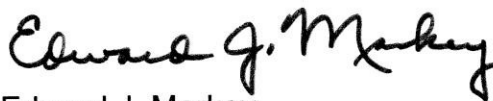
The security of radioactive dirty bomb materials is paramount in this age of terrorism, and it is not sufficient to have the persons responsible for the whereabouts of these two rods speculating about innocent explanations and benign impacts to the public when it is also possible that the material has been stolen or sent to a storage facility not equipped to house it. Moreover, spent nuclear fuel is not the only radioactive material the Commission is responsible for regulating that has gone missing; On April 9, I wrote you regarding 8 highly radioactive cesium sources that cannot be accounted for (see http://www.house.gov/markey/Issues/iss_dirtybombs_ltr040409.pdf). Because of the seriousness of this latest revelation from Vermont Yankee, I ask for your prompt assistance in responding to the following questions:

- 1) Please describe how it was discovered that the two Vermont Yankee fuel rods were missing? When were these fuel rods last accounted for?
- 2) What is the Commission doing to ascertain the whereabouts of the Vermont Yankee fuel rods? Please describe all investigative actions taken or planned to be taken.
- 3) What is the Commission doing to obtain an inventory of *all* spent nuclear fuel at *all* nuclear reactors in the U.S.? If no such inventory is planned, why not, since it is clear from both the Vermont and Connecticut cases that this could be an industry-wide problem?
- 4) The licensee of the Millstone nuclear reactor was fined only \$288,000 for its failure to keep track of its spent nuclear fuel. How much will Entergy be fined for its failure to keep track of the spent nuclear fuel at Vermont Yankee?
- 5) 10 CFR 70.51(c) states that "a power reactor licensee is required to establish, maintain and follow written material control and accounting procedures that are sufficient to enable the licensee to account for the special nuclear material (SNM) in its possession." In light of the fact that Vermont Yankee is unable to account for the whereabouts of these two missing fuel rods, do you believe that the licensee has complied with this requirement? Why or why not?
- 6) 10 CFR 70.51(d) states that a power reactor licensee is required to conduct a physical inventory of all SNM in its possession at intervals not to exceed 12 months." Given the fact that the two fuel rods apparently were not identified as missing in any physical inventory conducted by Entergy, do you believe that Entergy has complied with this requirement? Why or why not?

- 7) According to the Commission's February 1, 2001 letter to me regarding the Millstone missing spent fuel case, (see http://www.house.gov/markey/Issues/iss_nuclear_ltr010201.pdf), a variety of civil and criminal penalties can be imposed for violations of Commission regulations, including fines of up to \$100,000 per day prior to 1986 and fines of up to \$110,000 beginning in 1986. What would be the maximum civil monetary penalty incurred by Entergy in this case, assuming full application of the \$100,000-110,000 per day civil penalty mentioned in your letter?
- 8) In your February 1, 2001 letter, the Commission stated that "following the completion of the NRC's inquiry [into the Millstone matter], we will consider whether industry-wide generic action is warranted." Did you conclude that industry-wide generic action was warranted? If so, what action? If not, why not, and will you take such action now that a second such case has been revealed?
- 9) In your February 1, 2001 letter, you said that it is unlikely that the two spent fuel rods were stolen, because "The very high radiation level of the material makes theft difficult, dangerous, and very unlikely" and "amount and chemical form of the fissile material contained in the two spent fuel rods make it unlikely, in our judgment, that the rods could be used to assist in the manufacture of a weapon." However, the September 11th terror attacks have demonstrated that terrorists may be willing to commit suicide in order to cause harm to America, and may be willing to devote many years to the planning and execution of such an attack.
 - a) Have you evaluated the possibility that the fuel rods may have been stolen or diverted?
 - b) Isn't it possible that rather than trying to use the fissile material from these weapons for a nuclear explosive device or weapon, terrorists might want to use it for a crude radiological weapon, or "dirty bomb" aimed at dispersing radioactive materials in a populated area?
 - c) What would be the worst-case public health, safety, and environmental consequences of detonation of a "dirty bomb" fabricated from the two Vermont Yankee spent fuel rods?

Thank you for your assistance and cooperation in responding to this request. Please provide your response no later than Friday May 21, 2004. Should you have any questions about this inquiry, please have your staff contact Dr. Michal I. Freedhoff or Mr. Jeffrey S. Duncan of my staff at 202-225-2836.

Sincerely,



Edward J. Markey
Member of Congress